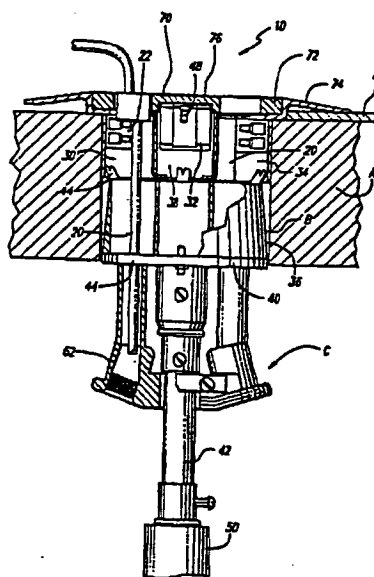




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(51) Int.Cl.⁶ H02G 3/22
(30) 1996/10/07 (08/723,456) US
(54) **RACCORD D'ENTREE A ENFONCEMENT DE TRANSFERT DE
SIGNAUX**
(54) **SIGNAL-TRANSFERRING POKE-THROUGH SERVICE
FITTING**



(57) Raccord d'entrée susceptible d'être installé dans le plancher d'une structure. Ce raccord permet l'activation des services d'alimentation électrique, de communication et/ou de transmission de données en ce point. Il permet également de procéder au transfert de signaux de données au moyen de connexions par jacks. Chacun de ceux-ci est muni d'une borne de câblage faisant partie intégrante du raccord et conçue pour que l'on dispose d'une prolongation continue de fil entre le point d'origine du fil et le jack, les bornes de câblage en question étant à l'épreuve du gaz et de l'humidité. Ce raccord est conçu pour recevoir les divers modèles

(57) The service fitting may be installed in the floor of a structure. It enables activation of power, communication, and/or data services at the fitting location. The fitting further enables transfer of data signals through jack connections. Each jack includes a wire termination internal to the fitting for providing continuous wire extension from the wire source to the jack, which wire terminations are rated gas and moisture proof. The fitting also enables accommodation of the variety of registered jack devices and receptacles made by various manufacturers. It includes bottom plates adapted to improve grounding capability, and adapted to accept





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enregistrés de jacks et de prises de courant femelles produits par divers fabricants. Il comporte des plaques inférieures conçues pour en améliorer les possibilités de mise à la terre et pour que l'on puisse introduire à ce niveau des raccords de conduit, situés au-dessous de canalisations séparées, en offrant un passage séparé à un câble d'entrée. Les jacks, eux aussi, sont logés de manière à dépasser de façon appréciable de la section orientée vers l'extérieur de ce raccord.

standard conduit fittings beneath separated raceways for separate service cable passage therethrough. The jacks are also accommodated so as to be substantially flush with the outwardly-facing portion of the fitting.



Industrie Canada Industry Canada

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates generally to in-floor fitting for enabling activation of power, communication and/or data services at the fitting location. It relates specifically to a signal-transferring poke-through service fitting.

Description of the Related Art

Poke-through fittings, for enabling activation of power, communication and/or data services at the fitting location, may be installed in a floor such as a concrete slab or steel deck, in a structure such as an office building.

Service cables loosely positioned in the plenum extending between the ceiling of the floor below and the floor above may be pulled from the plenum and associated with the service fitting, for activation of services.

Power service cables may be connected to the service fitting, to provide in-floor outlets for power plugs for electrical and electronic equipment.

Communication and/or data service cables may be passed through passages in the service fitting, for connection to communication and/or data equipment.

Data signal connectors accommodated previously in such service fittings have included jacks for connection of data signal device connectors thereto, to activate signal services. Jacks accommodated in such fittings include registered jack connectors RJ-11 and RJ-45.

However, an improved registered jack has been developed for data transfer, cataloged as an RJ-45 category 5, produced in accordance with trade association standards. The RJ-45 category 5 connector is a modular wiring connector, for enabling connection of telecommunications devices to network systems. It is capable of transferring voice, or data up to 100 megabits per second. It is the standard for computer data transfer.

Such jacks have not previously been provided internally in the fitting to terminate wiring at the jack, so that the fitting accommodates wiring from the source to the device without interruption.

Also, such fittings have not included wiring terminators constituting an industry standard, rated gas and moisture proof.

Further, such fittings have not been able to accommodate the variety of RJ-45 devices made by various manufacturers.

Also, such fittings have not included closures for closing the jack opening without disturbing the wiring.

Such fittings previously have not accommodated the wide variety of standard receptacles for power services. Such

receptacles include isolated ground, surge suppressor, ground fault, and receptacles which include a plurality of external pods for securing the receptacle face to the bottom cup.

Such fittings further have not included bottom plates adapted to improve the grounding capability of the fitting.

Such fittings also have not included bottom plates adapted to accept standard conduit fittings beneath a separate communication and/or data service raceway.

The jacks have further not been accommodated in such fittings previously with the jack substantially flush with the outwardly-facing portion of the fitting.

SUMMARY OF THE INVENTION

The service fitting of the invention overcomes the above problems and others associated with prior service fittings.

It comprises a poke-through service fitting for enabling activation of power, communication, and/or data services at the fitting location, and for transferring voice or data signals through jack connections.

Such jacks further include wire terminations internal to the fitting which provide continuous wire extension from the source to the jacks. The wire termination connection also constitutes an industry standard, rated gas and moisture proof.

The service fitting also includes elements for receiving the variety of signal connectors made by various manufacturers. It further includes closures for closing the connector-receiving elements without disturbing the wiring.

Such service fitting further includes interior space for accommodating the wide variety of standard receptacles for power services, including isolated ground, surge suppressor ground fault, and external pod-secured receptacles.

It also includes bottom plates adapted to include an electrical metalized tubing connector for securing a conduit system thereto, to improve fitting grounding capability.

Such bottom plates are further adapted to be cast so as to accept standard conduit fittings beneath a separate wire management communication and/or data service fitting raceway.

The jacks are also accommodated in the fitting so as to be substantially flush with the outwardly-facing portion of the service fitting.

DESCRIPTION OF THE DRAWINGS

FIGURE 1 is an elevational partly-sectional view of the signal-transferring poke-through power, communication and/or data service fitting of the invention, installed in a floor opening;

FIGURE 2 is a top plan view of the fitting; and

FIGURE 3 is a top plan fragmentary view of the fitting.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The invention comprises a fitting 10, for activation by source power, communication and/or data service cables (not shown) positioned below a floor A, as shown in Figure 1. Fitting 10 may be installed in a building such as a commercial office building. The service cables which activate fitting 10 may include power cables, and cables capable of transferring signals consisting of communication (voice) or data signals. Floor A may be fire-rated.

Fitting 10 may be installed in an opening B formed in floor A to activate a desired location therein, and is adapted to enable power plugs and signal transferring connectors to be connected thereto. The signal transferring connectors may comprise RJ-45 Category 5 connectors, capable of transferring signals consisting of communication or data signals.

Fitting 10 is further adapted to retard the transmission of heat and flame from a fire from the floor below, through plenum C in floor A, and through floor opening B and fitting 10, to floor A. It is operable such that the fire rating of floor A is substantially the same with or without floor opening B and fitting 10 therein.

Fitting 10 comprises an insert 20, for activation by source service cables, and for retarding the transmission of heat and flame from a fire. It further includes jacks 22, for enabling signal transferring connectors to be connected thereto.

Insert 20 includes an internal space 30 for receiving a power receptacle 32, to which source power cables (not shown) positioned below floor A may be connected for activation of power services. Internal space 30 may have a nominal diameter of 3 1/2 inches, substantially larger than the internal space therefor in prior fittings which have a nominal diameter of up to 3 inches, for enabling any one of a plurality of types of receptacles to be mounted therein. Internal space 30 is adapted to accommodate most standard 15 and 20 amp receptacles, including isolated ground, surge suppressor, ground fault, and receptacles including external pods for securing the receptacle face to a bottom cup.

Insert 20 also includes an upper insulator element 34, for absorbing and dissipating heat. Upper insulator 34 is generally tubular-shaped, and includes a central recess for receiving receptacle 32 therein, and a medial opening for enabling power conductors to pass therethrough for connection to receptacle 32 at terminals therein.

Upper insulator 34 is preferably comprised of a partially cured phenolic compound material, such as "Plenco 552," manufactured by Plastics Engineering Company, Sheboygan, Wis. "Plenco 552" is a thermosetting glass fiber reinforced phenolic compound, pelletized for improved moldability, which has improved impact and electrical properties, and dimensional stability and moldability.

Insert 20 further includes a fire retarding element 36, comprised of fire retarding material, which may comprise a coated rubber intumescent material, cast in a generally tubular shape, and encapsulated in a composition such as polyvinyl chloride. Fire retardant element 36 may alternatively comprise a graphite intumescent material in a urethane matrix.

Fire retarding element 36 is preferably comprised of an intumescent material, such as "ALVA-TECH Fire Barrier Sheet FB525" manufactured by Alva-Tech, Inc., Asbury Park, N.J. "ALVA-TECH Fire Barrier Sheet FB525" is an intumescent material which, when exposed to heat and flame, absorbs heat and begins to expand at a relatively low temperature (at about 250°F.). It expands in all directions rapidly and very substantially (for example, to about 1.5 times original size at about 250°F., and to about 6.3 times original size at about 500°F.), and the resultant flexible foam seals openings, forming an insulating barrier to retard the

spreading of flames and to control temperature increase. It forms a very strong refractory char as the temperature continues to rise, which seals openings to form an efficient heat and smoke barrier, retarding transmission of heat and flame.

Insert 20 also includes a raceway 38 extending through insert 20 for passing service cables to terminals for activation of services.

It further includes a bottom plate 40, for supporting fire retarding element 36 thereon. Bottom plate 40 may comprise a casting, for enabling connection of an electrical metalized tubing (EMT) connector 42 for securing a conduit system thereto for improving grounding capability. Connector 42 may further be connected to a junction box 50. Junction box 50 includes a terminal (not shown) for connection of service cables thereto.

Receptacle 32 may be pre-wired, with wires (not shown) connected between terminals in receptacle 32 and a terminal in the junction box 50 and extending through raceway 38 and connector 42. Bottom plate 38 further includes tapped openings 44 for enabling conduit fittings (not shown) to be connected thereto.

Insert 20 also includes a retainer 46, for retaining fitting 10 in floor opening B, and shoulder screws 48, for securing fire retarding element 34 between retainer 46 and bottom plate 40.

Insert 20 also includes tubes 60 for passing signal service cables therethrough, extendable through communication adapters 62. Tubes 60 are comprised of a dielectric material, which may comprise butyrate. The butyrate of which signal tubes 60 are comprised has a dielectric of about 300-475 volts per mil, and such tubes are about 15 mils thick. The dielectric of the fire retarding material may be about 500-600 volts per mil, and such material may be about 250 mils thick. The dielectric of the signal tube material and of the fire retarding material are substantially the same as the dielectric of about 10,000 volts for electrical safety for fitting 10.

Fitting 10 further includes a top assembly 70 for activating fitting 10, connectable to insert 20.

Top assembly 70 includes a service head 72, a generally disk-shaped finishing ring 74, and receptacle 32 which includes terminals for connection of power cables thereto.

Service head 72 includes a top face 76, which extends above floor A so as to be substantially flush with the top of a carpet D installed on floor A.

It further includes sliders 78, as shown in Figure 3, for covering outlets 80 in receptacle 32 if not in use. Sliders 78 include slots 82, alignable with the receptacle outlets 80 upon moving sliders 78, to enable use of the receptacle outlets 80 for connection of electrical and/or electronic devices thereto.

Service head 72 also includes pods 84,84, external to receptacle 32, comprising compartments for locating jacks 22 therein for connection of signal connectors thereto, adapted to enable any one of a plurality of types of jacks to be installed therein.

Service head 72 further includes outlets (not shown for jacks 22. It also includes an element (not shown) for closing signal cables passing tubes 60, which includes elements for closing outlets for jacks 22, if signal service is not activated at that location. Jack outlet closing elements may comprise blanks, adapted to be inserted in outlets to close the outlets without disturbing the wiring.

Jack 22 may be adapted to receive an RJ-45 Category 5 connector. It includes terminals (not shown) for connection thereto of the signal service cables positioned below floor A. The terminals may be adapted to be rated gas and moisture proof.

Jack 22 further includes a top face 86, substantially flush with top face 76 of service head 72.

To install fitting 10 in floor A, at a desired location for service activation, floor A may be drilled at the desired location for access to the power, communication and/or data services, as by core drilling, to form floor opening B.

The power and/or signal service cables positioned below floor A may be pulled for connection to fitting 10. The power cables may be pulled to connect to terminals and wires in junction box 50, to activate power services. The signal cables may be pulled through tapped openings 44 and tubes 60 in insert 20 for connection to jacks, as 22, for activation of communication or data services. A signal connector, such as an RJ-45 Category 5 connector, may be connected to jacks 22, to activate signal-operable equipment.

Insert 20 and the attached junction box may then be oriented relative to floor opening B, to be pushed thereinto until service

head 72 rests on floor A such that top face 76 of service head 72 is substantially flush with the top of carpet D. Retainer 46 grips floor opening B, to resist pulling of fitting 10 from floor opening B.

In operation, fire retarding element 36 is activated by a fire below floor A, upon exposure to heat and flame from the fire rising through floor opening B.

Fire retarding element 36 is preferably comprised of intumescent material which absorbs heat. They are activated to expand into floor opening B, about insert 20, and about power cables extending through raceway 38, under pressure. They form flexible foam seals, sealing openings, and forming very strong refractory chars. They seal openings to form efficient heat and smoke barriers, retarding transmission of heat and flame from the fire.

Fire retarding element 36 is thereby activated upon exposure to heat and flame from a fire to prevent heat and flame from the fire from being transmitted therethrough. This enables the fire rating of floor A to be substantially the same with or without floor opening B and fitting 10 therein.

In use, sliders 78 in service head 72 may be moved so that outlet slots 82 in sliders 78 align with outlets 80 in receptacle 32. Plugs (not shown) from electrical and/or electronic devices may be plugged into the receptacle outlets 80 for activation of power services.

Signal connectors, such as an RJ-45 Category 5 connector, may be connected to jacks 22, for activation of signal services.

Internal space 30 in insert 20 is substantially larger than the internal space therefor in prior fittings, and is adapted to accommodate any one of a plurality of types of receptacles 32.

Pods 84 for jacks 22 are adapted to accommodate any one of a plurality of types of jacks 22. Jacks 22 include terminals (not shown) adapted to be rated gas and moisture proof. Top face 86 of jack 22 is substantially flush with top face 76 of service head 72. Jack 22 includes terminals (not shown), accepting service cables from the source in plenum C through fitting 10 thereto. Jack outlet closing elements (not shown) may comprise blanks for closing signal cables passing tubes 60 without interfering with the signal cables.

Bottom plate 40 of insert 20 comprises a casting, for enabling connection of electrical metalized tubing connector 42

thereto for grounding capability, and for enabling tapped openings 44 to be formed therein for accepting standard conduit fittings.

The tubes 60 in insert 20 for passing signal service cables therethrough are comprised of a dielectric material, such as butyrate. Fire retarding element 36 is also comprised of a dielectric material, such as a coated rubber intumescent material. The dielectric of the signal tubes and of fire retarding element 36 are substantially the same as the dielectric for electrical safety for fitting 10.

A preferred embodiment of the invention has been set forth above, for the purpose of explaining the invention. However, it is to be understood that variations in such embodiment may be made which are nevertheless within the scope and spirit of the invention as set forth in the claims.

WE CLAIM:

1. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor, comprising:

(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting, insertable in the floor opening;

(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert; and

(c) means for enabling the signal connection enabling means to be activated, for activation of signal services, adapted to be positioned in the insert.

2. A fitting as in claim 1, in which the signal connection enabling means comprise a jack.

3. A fitting as in claim 1, further comprising means for passing signal service cables through the insert.

4. A fitting as in claim 1, in which the insert includes an internal space for receiving a receptacle, substantially larger than the internal space therefor in a prior fitting, for enabling any one of a plurality of types of receptacles to be received therein.

5. A fitting as in claim 1, in which the insert includes a bottom plate, comprising a casting, for enabling an electrical metalized tubing connector to be secured thereto.

6. A fitting as in claim 1, in which the floor is fire-rated, and the insert further comprises means for retarding the transmission of heat and flame from a fire through the floor opening and the fitting to the floor, adapted to enable the fire rating of the floor to be substantially the same with or without the floor opening and fitting therein.

7. A fitting as in claim 2, in which the jack includes means for terminating the signal service cable, and in which the signal service cable is extendable from below the floor to the jack terminating means.

8. A fitting as in claim 2, further comprising a service head, and means for connecting the service head to the insert, and in which the jack is mounted in the service head.

9. A fitting as in claim 3, in which the signal cables passing means comprise a tube.

10. A fitting as in claim 5, in which the bottom plate includes tapped openings, for enabling conduit fittings to be connected thereto.

11. A fitting as in claim 6, in which the fire transmission retarding means include an element comprised of fire retarding material.

12. A fitting as in claim 7, in which the terminating means are adapted to be rated gas and moisture proof.

13. A fitting as in claim 8, in which the service head includes a top face, the jack includes a top face, and the top face of the jack is substantially flush with the top face of the service head.

14. A fitting as in claim 9, further comprising means for closing the passing means.

15. A fitting as in claim 9, in which the tube is comprised of a dielectric material.

16. A fitting as in claim 9, in which the insert further comprises means for retarding the transmission of heat and flame from a fire through the floor opening and the fitting to the floor, adapted to enable the fire rating of the floor to be substantially the same with or without the floor opening and fitting therein, and in which the tube is comprised of a dielectric material, and the fire transmission retarding means are comprised of a fire retarding material comprised of a dielectric material, adapted to enable the dielectric of the tube material and the dielectric of the fire retarding material to be substantially the same as the dielectric for the fitting for electrical safety.

17. A fitting as in claim 11, in which the fire retarding material comprises intumescent material.

18. A fitting as in claim 13, in which the service head is adapted to extend above the floor such that the top face of the service head is substantially flush with the top of a carpet adapted to be installed on the floor.

19. A fitting as in claim 14, in which the closing means include openings adapted to enable any one of a plurality of types of jacks to be installed therein.

20. A fitting as in claim 14, in which the closing means include openings, and means for covering the openings.

21. A fitting as in claim 15, in which the dielectric material comprises butyrate.

22. A fitting as in claim 17, in which the intumescent material comprises coated rubber intumescent material.

23. A fitting as in claim 20, in which the covering means comprise a plurality of blanks, adapted to be inserted in the openings.

24. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

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(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting; and

(b) means for enabling a signal transferring connector to be connected to the insert, comprising a jack.

25. A fitting as in claim 24, in which the jack includes means for terminating the signal service cable, and in which the signal service cable is extendable from below the floor to the jack terminating means.

26. A fitting as in claim 24, further comprising a service head, and means for connecting the service head to the insert, and in which the jack is mounted in the service head.

27. A fitting as in claim 25, in which the terminating means are adapted to be rated gas and moisture proof.

28. A fitting as in claim 26, in which the service head includes a top face, the jack includes a top face, and the top face of the jack is substantially flush with the top face of the service head.

29. A fitting as in claim 28, in which the service head is adapted to extend above the floor such that the top face of the

service head is substantially flush with the top of a carpet adapted to be installed on the floor.

30. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting, insertable in the floor opening;

(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert; and

(c) means for passing signal service cables through the insert, adapted to be positioned in the insert.

31. A fitting as in claim 30, in which the signal cables passing means comprise a tube.

32. A fitting as in claim 31, further comprising means for closing the passing means.

33. A fitting as in claim 31, in which the tube is comprised of a dielectric material.

34. A fitting as in claim 31, in which the insert further comprises means for retarding the transmission of heat and flame from a fire through the floor opening and the fitting to the floor, adapted to enable the fire rating of the floor to be substantially the same with or without the floor opening and fitting therein, and in which the tube is comprised of a dielectric material, and the fire transmission retarding means are comprised of a fire retarding material comprised of a dielectric material, adapted to enable the dielectric of the tube material and the dielectric of the fire retarding material to be substantially the same as the dielectric for the fitting for electrical safety.

35. A fitting as in claim 32, in which the closing means include openings adapted to enable any one of a plurality of types of jacks to be installed therein.

36. A fitting as in claim 32, in which the closing means include openings, and means for covering the openings.

37. A fitting as in claim 33, in which the dielectric material comprises butyrate.

38. A fitting as in claim 36, in which the covering means comprise a plurality of blanks, adapted to be inserted in the openings.

39. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

0 (a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting, insertable in the floor opening, including an internal space for receiving a receptacle, substantially larger than the internal space therefor in a prior fitting, for enabling one of a plurality of types of
5 receptacles to be received therein; and

(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert.

40. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting including a bottom plate, insertable in the floor opening, comprising a casting, for enabling an electrical metalized tubing connector to be secured thereto; and

(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert.

41. A fitting as in claim 40, in which the bottom plate includes tapped openings, for enabling conduit fittings to be connected thereto.

ABSTRACT OF THE DISCLOSURE

The service fitting may be installed in the floor of a structure. It enables activation of power, communication, and/or data services at the fitting location. The fitting further enables transfer of data signals through jack connections. Each jack includes a wire termination internal to the fitting for providing continuous wire extension from the wire source to the jack, which wire terminations are rated gas and moisture proof. The fitting also enables accommodation of the variety of registered jack devices and receptacles made by various manufacturers. It includes bottom plates adapted to improve grounding capability, and adapted to accept standard conduit fittings beneath separated raceways for separate service cable passage therethrough. The jacks are also accommodated so as to be substantially flush with the outwardly-facing portion of the fitting.

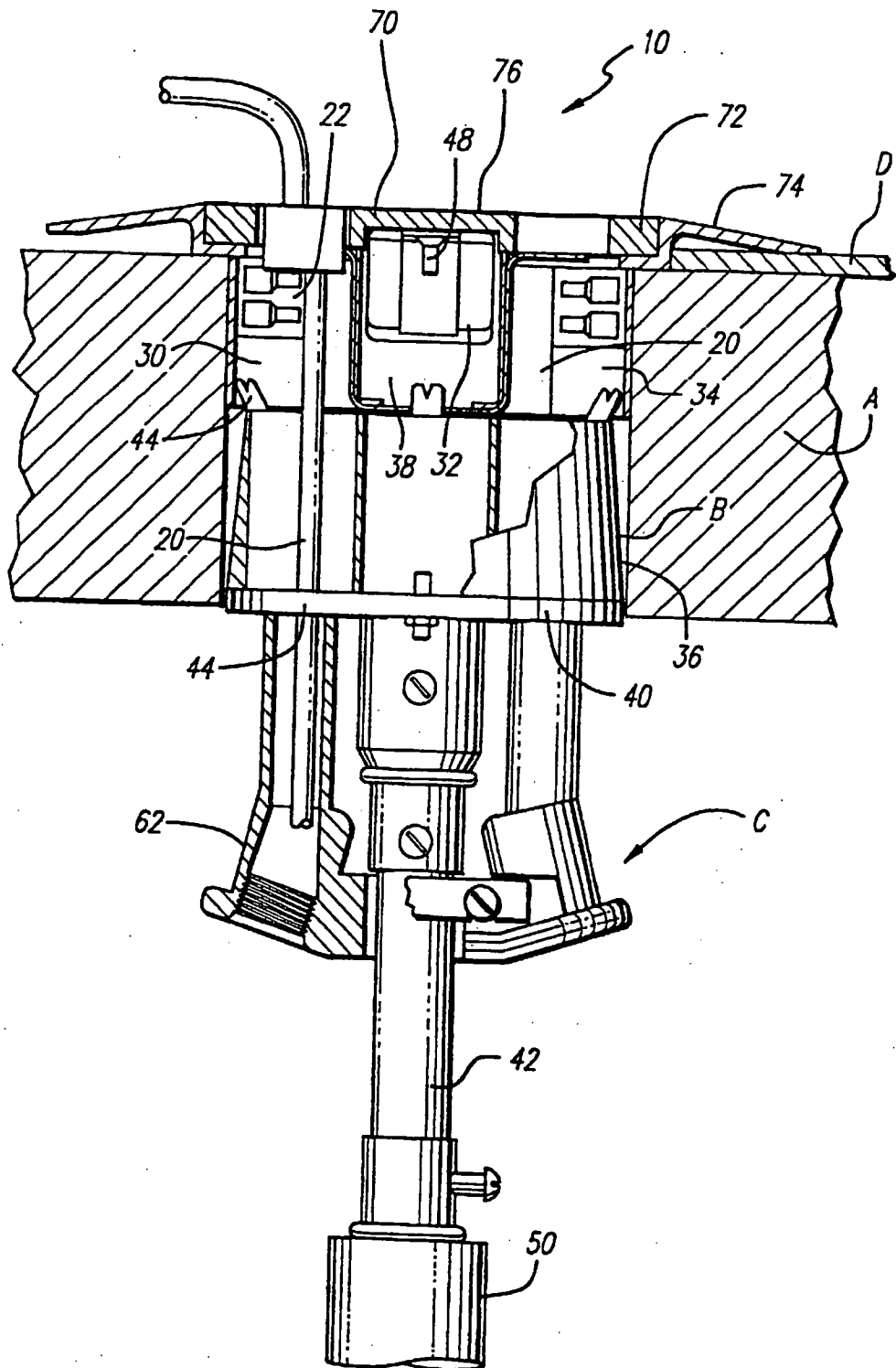


FIG. 1

FIG. 2

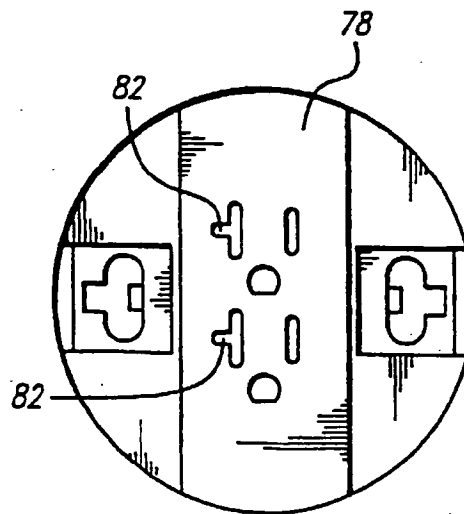
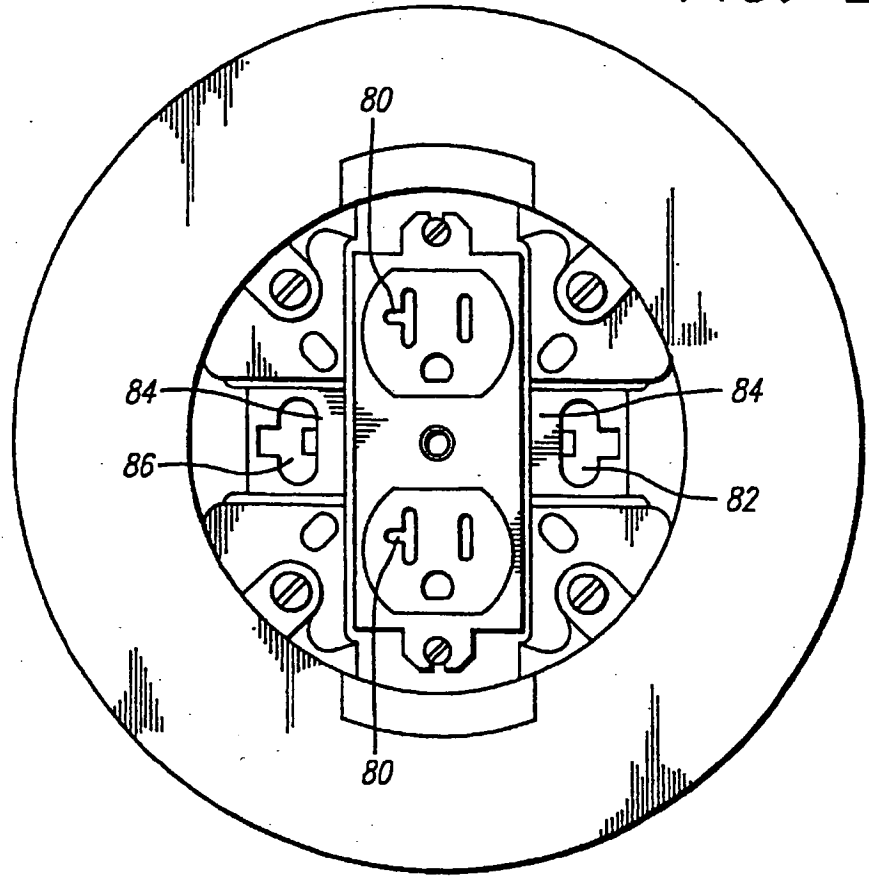


FIG. 3



European Patent
Office

**SUPPLEMENTARY
EUROPEAN SEARCH REPORT**

Application Number
EP 00 95 9305

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|---|---|--|--|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
| X | CA 2 211 066 A (RACEWAY COMPONENTS DIV) 7 April 1998 (1998-04-07) | 12, 13, 15, 17, 20-26 | H02G3/04 H02G3/18 |
| A | * the whole document * | 1, 4, 12, 27, 28 | |
| | | | TECHNICAL FIELDS SEARCHED (Int.Cl.7) |
| | | | H02G |
| The supplementary search report has been based on the last set of claims valid and available at the start of the search. | | | |
| Place of search MUNICH | | Date of completion of the search 13 August 2002 | Examiner Moueza, A |
| CATEGORY OF CITED DOCUMENTS | | | |
| X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document | | T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | |

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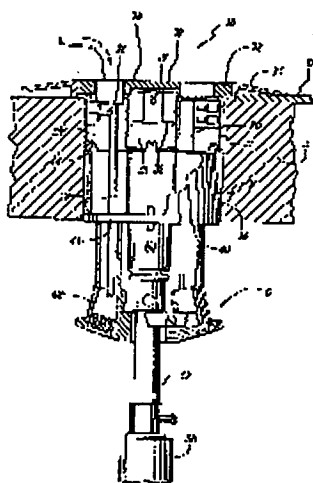
(12) Patent Application:

(11) CA 2211066

(54) SIGNAL-TRANSFERRING POKE-THROUGH SERVICE FITTING

(54) RACCORD D'ENTREE A ENFONCEMENT DE TRANSFERT DE SIGNAUX

Representative Drawing:



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ABSTRACT:

The service fitting may be installed in the floor of a structure. It enables activation of power, communication, and/or data services at the fitting location. The fitting further enables transfer of data signals through jack connections. Each jack includes a wire termination internal to the fitting for providing continuous wire extension from the wire source to the jack, which wire terminations are rated gas and moisture proof.

The fitting also enables accommodation of the variety of registered jack devices and receptacles made by various manufacturers. It includes bottom plates adapted to improve grounding capability, and adapted to accept standard conduit fittings beneath separated raceways for separate service cable passage therethrough. The jacks are also accommodated so as to be substantially flush with the outwardly-facing portion of the fitting.

CLAIMS: Show all claims

*** Note: Data on abstracts and claims is shown in the official language in which it was submitted.

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Patent Cooperation Treaty (PCT): No

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Canadian Patents Database

Patent Document Number 2211066 :

SIGNAL-TRANSFERRING POKE-THROUGH SERVICE FITTING

RACCORD D'ENTREE A ENFONCEMENT DE TRANSFERT DE SIGNAUX

CLAIMS:

WE CLAIM:

1. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor, comprising:
(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting, insertable in the floor opening;
(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert; and
(c) means for enabling the signal connection enabling means to be activated, for activation of signal services, adapted to be positioned in the insert.

2. A fitting as in claim 1, in which the signal connection enabling means comprise a jack.

3. A fitting as in claim 1, further comprising means for passing signal service cables through the insert.

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4. A fitting as in claim 1, in which the insert includes an internal space for receiving a receptacle, substantially larger than the internal space therefor in a prior fitting, for enabling any one of a plurality of types of receptacles to be received therein.

5. A fitting as in claim 1, in which the insert includes a bottom plate, comprising a casting, for enabling an electrical metalized tubing connector to be secured thereto.

6. A fitting as in claim 1, in which the floor is fire-rated, and the insert further comprises means for retarding the transmission of heat and flame from a fire through the floor opening and the fitting to the floor, adapted to enable the fire rating of the floor to be substantially the same with or without the floor opening and fitting therein.

7. A fitting as in claim 2, in which the jack includes means for terminating the signal service cable, and in which the signal service cable is extendable from below the floor to the jack terminating means.

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8. A fitting as in claim 2, further comprising a service head, and means for connecting the service head to the insert, and in which the jack is mounted in the service head.

9. A fitting as in claim 3, in which the signal cables passing means comprise a tube.

10. A fitting as in claim 5, in which the bottom plate includes tapped openings, for enabling conduit fittings to be connected thereto.

11. A fitting as in claim 6, in which the fire transmission retarding means include an element comprised of fire retarding material.

12. A fitting as in claim 7, in which the terminating means are adapted to be rated gas and moisture proof.

13. A fitting as in claim 8, in which the service head includes a top face, the jack includes a top face, and the top face of the jack is substantially flush with the top face of the service head.

14. A fitting as in claim 9, further comprising means for closing the passing means.

15. A fitting as in claim 9, in which the tube is comprised of a dielectric material.

16. A fitting as in claim 9, in which the insert further comprises means for retarding the transmission of heat and flame from a fire through the floor opening and the fitting to the floor, adapted to enable the fire rating of the floor to be substantially the same with or without the floor opening and fitting therein, and in which the tube is comprised of a dielectric material, and the fire transmission retarding means are comprised of a fire retarding material comprised of a dielectric material, adapted to enable the dielectric of the tube material and the dielectric of the fire retarding material to be substantially the same as the dielectric for the fitting for electrical safety.

17. A fitting as in claim 11, in which the fire retarding material comprises intumescent material.

18. A fitting as in claim 13, in which the service head is adapted to extend above the floor such that the top face of the service head is substantially flush with the top of a carpet adapted to be installed on the floor.

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19. A fitting as in claim 14, in which the closing means include openings adapted to enable any one of a plurality of types of jacks to be installed therein.

20. A fitting as in claim 14, in which the closing means include openings, and means for covering the openings.

21. A fitting as in claim 15, in which the dielectric material comprises butyrate.

22. A fitting as in claim 17, in which the intumescent material comprises coated rubber intumescent material.

23. A fitting as in claim 20, in which the covering means comprise a plurality of blanks, adapted to be inserted in the openings.

24. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

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(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting; and
(b) means for enabling a signal transferring connector to be connected to the insert, comprising a jack.

25. A fitting as in claim 24, in which the jack includes means for terminating the signal service cable, and in which the signal service cable is extendable from below the floor to the jack terminating means.

26. A fitting as in claim 24, further comprising a service head, and means for connecting the service head to the insert, and in which the jack is mounted in the service head.

27. A fitting as in claim 25, in which the terminating means are adapted to be rated gas and moisture proof.

28. A fitting as in claim 26, in which the service head includes a top face, the jack includes a top face, and the top face of the jack is substantially flush with the top face of the service head.

29. A fitting as in claim 28, in which the service head is adapted to extend above the floor such that the top face of the

23 service head is substantially flush with the top of a carpet adapted to be installed on the floor.

30. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting, insertable in the floor opening;
(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert; and
(c) means for passing signal service cables through the insert, adapted to be positioned in the insert.

31. A fitting as in claim 30, in which the signal cables passing means comprise a tube.

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32. A fitting as in claim 31, further comprising means for closing the passing means.

33. A fitting as in claim 31, in which the tube is comprised of a dielectric material.

34. A fitting as in claim 31, in which the insert further comprises means for retarding the transmission of heat and flame from a fire through the floor opening and the fitting to the floor, adapted to enable the fire rating of the floor to be substantially the same with or without the floor opening and fitting therein, and in which the tube is comprised of a dielectric material, and the fire transmission retarding means are comprised of a fire retarding material comprised of a dielectric material, adapted to enable the dielectric of

the tube material and the dielectric of the fire retarding material to be substantially the same as the dielectric for the fitting for electrical safety.

35. A fitting as in claim 32, in which the closing means include openings adapted to enable any one of a plurality of types of jacks to be installed therein.

36. A fitting as in claim 32, in which the closing means include openings, and means for covering the openings.

37. A fitting as in claim 33, in which the dielectric material comprises butyrate.

38. A fitting as in claim 36, in which the covering means comprise a plurality of blanks, adapted to be inserted in the openings.

39. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting, insertable in the floor opening, including an internal space for receiving a receptacle, substantially larger than the internal space therefor in a prior fitting, for enabling one of a plurality of types of receptacles to be received therein; and

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(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert.

40. A poke-through service fitting, for activation by source service cables positioned below a floor, adapted to be installed in an opening formed at a selected location in the floor, which fitting further enables a signal transferring connector to be connected thereto, and further retards the transmission of heat and flame from a fire from the floor below through the floor opening and fitting to the floor above, comprising:

(a) an insert for activation by source service cables and for retarding the transmission of heat and flame from a fire through the floor opening and the fitting including a bottom plate, insertable in the floor opening, comprising a casting, for enabling an electrical metalized tubing connector to be secured thereto; and

(b) means for enabling a signal transferring connector to be connected to the insert, adapted to be positioned in the insert.

41. A fitting as in claim 40, in which the bottom plate includes tapped openings, for enabling conduit fittings to be connected thereto.

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